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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/549,709

10/12/2005

Martin Twelftree

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7991

30565

7590

04/22/2009

WOODARD, EMHARDT, MORIARTY, MCNETT & HENRY LLP  
111 MONUMENT CIRCLE, SUITE 3700  
INDIANAPOLIS, IN 46204-5137

EXAMINER

HOOVER, MATTHEW

ART UNIT

PAPER NUMBER

4122

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/549,709	<b>Applicant(s)</b> TWELFTREE, MARTIN	
	<b>Examiner</b> MATTHEW HOOVER	<b>Art Unit</b> 4122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 26-49 is/are pending in the application.
- 4a) Of the above claim(s) 44-49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/16/05</u> .   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Applicant's election with traverse of claims 26-43 in the reply filed on 3/26/09 is acknowledged.

The traversal is on the ground(s) that the reference does not disclose a control unit which is adapted to adjust automatically a parameter of the operation of the heat source. This is not found persuasive because the reference Sakuma (EP 0880020) discloses the control unit controls the value of the current running through the heater and the amount of current determines the temperature of the heater. Therefore the control unit described is adapted to adjust the amount of heat applied to the smoking article.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 26-29 and 39-41 rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma et al (US 6161551).

Regarding claims 26 and 28-29, Sakuma teaches an ignition system with a heater (#45) that emits heat in order to ignite the smoking article (column 6 lines 52-58) which is held by the smoking machine (column 3 lines 26-36). It also has an automatic sensor that detects the position of the end of the smoking article (column 3 lines 37-46). The entire device is automatic (abstract). It also discloses a control unit which controls the current in the heater. The current controls the temperature of the heater (column 10 lines 27-34). The sensor determines the end position of the smoking article and is in communication with the controller to move the heater to a lighting position based on the position determined by the sensor (column 10 lines 17-26).

Sakuma does not teach that the end position of the smoking article determines the temperature of the heater.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to determine that the control unit is capable of adjusting the temperature parameter of the heater based on the end position determined by the sensor. The reason for this is that the sensor and control unit can already be seen to be in communication. Furthermore, the control unit is capable of changing the temperature of the heater as well as position. Therefore it would be obvious to substitute the parameter of temperature for position based on the information gathered by the sensor.

Regarding claim 27, Sakuma also teaches that the heater is placed in position to light the smoking article and the smoking machine inhales air in order to ignite the smoking article (column 10 lines 16-20). The inhalation by the smoking machine is done in close proximity of the heater (column 10 lines 17-18). This causes air convection to occur over the heater, because fluid molecules in the air are moved across it to the smoking machine and lighting occurs.

Regarding claim 28, the control unit would therefore be able to control the temperature of the heater. This means that the control unit controls the amount of heat coming from the heater to the end of the smoking article. Regarding claim 29, since the control unit is controlling temperature it can either disperse heat towards the smoking article by raising the temperature or disperse heat away from the smoking article by lowering the temperature.

Regarding claims 39 and 40, Sakuma teaches that a smoking device is lit and goes through a puff cycle until it is determined to be burned down to a discardable length. At this point the smoking article is discarded (column 5 lines 10-40). A new smoking article is supplied to the smoking mouths after one is discarded to make the process continuous (column 11 lines 41-45). The new smoking article is supplied by the roll tray supplying mechanism and is controlled by the control unit (column 7 lines 1-7 and column 8 lines 3-5). The smoking articles are discarded based on the end position determined by a sensor (column 9 lines 36-46).

Regarding claim 39, Sakuma does not teach that the control unit automatically adjusts the time for which heat is applied to the end of the smoking article depending on

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the location of the end. Regarding claim 40, Sakuma does not teach that the control unit can adjust the timing of the application of heat with respect to the puff cycle depending on the end position of the smoking article.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have the control adjust the timing of applying heat to the smoking article based on the end of said article. The reason for this is that the control unit controls when new smoking articles are added to the smoking machine and the control unit does this based on the end positions of the current smoking articles that are to be discarded. It therefore controls when a new one is to be added and subsequently, lit. Since the control unit controls the addition of new smoking articles based on the puff cycle and controls the application of heat to said smoking articles, it would be capable of changing the timing of these steps. Regarding claim 39, since the control unit controls the lighting time of the smoking article, it means that the control unit controls the timing of the lighting. Therefore it would be obvious that the controller would control the timing duration of the lighting as well, since this is just another timing variant of the control unit. Furthermore, the control unit controls all operations of the smoking machine (column 5 lines 56-58) and therefore controls the timing of heat to the smoking articles (which makes it adjustable).

Regarding claim 41, Sakuma also teaches that the control unit controls the roll tray supplying mechanism, which means it controls the movement of the smoking articles (column 8 lines 3-5). The control unit also controls the movement of the heater

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(column 10 lines 35-39). During lighting, it is preferable for the predetermined distance between smoking article and heater to be 1mm (column 10 lines 17-18).

4. Claims 30-32 and 35-36 rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma et al (US 6161551) in view of Righetto (US 1763443).

Regarding claims 30-32 and 35-36, the teachings of Sakuma are disclosed above in the rejection of claim 26.

Sakuma does not teach that the smoking article is lit by electromagnetic radiation or that the control unit can adjust the level of radiation or the wavelength range applied to the end of the smoking article based on the end position of said article.

Righetto teaches a lighter that uses electromagnetic radiation in order to light a smoking article (column 1 lines 1-9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the smoking machine in Sakuma with the electromagnetic radiation lighter from Righetto. The rationale to do so would have been the motivation provided by the teaching of Righetto that to do so would predictably create a lighter that was compact, cheap to construct and easy to use (column 1 lines 1-9). It is inherent that electromagnetic radiation gives off heat. It is also inherent that the more radiation given off, the more heat is emitted. Finally, it is inherent that the shorter the wavelength, the greater the intensity or heat. This means that adjusting the wavelength range will adjust the level of heat transmitted, making them obvious variants of each other. Therefore, since Sakuma has a control unit that can control temperature, it would be obvious to

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substitute the amount of radiation (or wavelength range) for temperature and have the control unit control the amount because both give off heat and transmit heat to light a smoking article. The amount of radiation (or wavelength range) can be determined automatically, and adjusted in the same way as temperature, by the sensor disclosed in the rejection for claim 26 above, because they are obvious variants to each other.

5. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma et al (US 6161551) in view of Righetto (US 1763443) in further view of Audet et al (US 3877312).

The combined teachings of Sakuma and Righetto are disclosed above in the rejection of claims 26-29, 30-32, 35-36 and 39-41 above.

Neither Sakuma nor Righetto teach that the smoking machine includes an adjustable shield that is used to shield a heat source from the end of the smoking article.

Audet teaches that a guard is used to shield a heater (column 2 lines 12-22)

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the smoking machine in Sakuma and Righetto with the shield from Audet. The rationale to do so would have been the motivation provided by the teaching of Audet that to do so would predictably control the temperature of the heater and prevent heat transfer when it is not desirable (column 2 lines 12-22). The action of making the shield adjustable would have been obvious since it has been held that



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making a part adjustable is within the skill of one of ordinary skill in the art. See *In re Stevens*, 212 F.2d 197, 101 USPQ 284 (CCPA 1954).

6. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma et al (US 6161551) in view of Righetto (US 1763443) in further view of Whiteford (US 4136671).

The teachings of Sakuma and Righetto are disclosed above in the rejection of claims 26-29, 30-32, 35-36 and 39-41 above.

Neither Sakuma nor Righetto teach that the smoking machine includes an adjustable reflector or refractor which is adapted to selectively focus or direct radiation emitted from the heat source towards said end of the smoking article.

Whiteford teaches a reflector that is used to reflect electromagnetic radiation toward a predetermined focus (column 1 lines 39-64). The reflector is used in a heating system (column 1 lines 5-10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the smoking machine in Sakuma and Righetto with reflector from Whiteford. The rationale to do so would have been the motivation provided by the teaching of Whiteford that to do so would predictably increase efficiency of the heater (column 1 lines 32-36). It is inherent that focusing radiation would increase the efficiency of the heater because all of the radiation (and therefore heat) would be directed towards one point and less radiation would miss directly hitting the focus point. It is also obvious to focus on the end of the smoking article because Sakuma discloses

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that this is the part that is to be lit. The action of making the reflector adjustable is obvious so as to direct as much (or little) radiation to the focus point as possible. See *In re Stevens*, 212 F.2d 197, 101 USPQ 284 (CCPA 1954).

7. Claims 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma et al (US 6161551) in view of Righetto (US 1763443) in further view of Muller (US 3739365).

The teachings of Sakuma and Righetto are disclosed above in the rejection of claims 26-29, 30-32, 35-36 and 39-41 above.

Neither Sakuma nor Righetto teach that the system contains a thermal filter located between the heat source and the smoking article that can absorb or reflect radiation to prevent the transmission of a proportion of radiation emitted from reaching the smoking article. It also does not teach that multiple filters, each at discrete areas of the device with different absorption/reflection characteristics can be placed in the system and that moving the position of said filters changes the amount of radiation transmitted to the smoking articles.

Regarding claim 37, Muller teaches that dichroic filter (which is a type of thermal filter) is placed in between the radiation source and the end target for said radiation (column 6 lines 67-68 and column 7 lines 1-18). The filter reflects only a certain portion of the radiation that hits it onto the target (column 7 lines 6-8). Therefore a proportion of the radiation is reflected and a portion is transmitted to the target.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the smoking machine in Sakuma and Righetto with the filter from Muller. The rationale to do so would have been the motivation provided by the teaching of Muller that to do so would predictably reflect a portion of the radiation emitted away from the receiver, and thus, direct only a portion towards it (column 6 lines 67-68, column 7 lines 1-18 and figure 10). Also, the omission of an element and its function is obvious if the function of the element is not desired. Therefore it would be obvious to make the filter removable if its function was not desired. See *In re Larson*, 340 F.2d 965, 144 USPQ 347 (CCPA 1965).

Regarding claim 38, Muller teaches that dichroic filters can be placed in the system with different reflection characteristics (column 6 lines 67-68 and column 7-lines 1-3).

Muller does not teach the addition of a filter with absorption/reflection characteristics.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the smoking machine in Sakuma and Righetto with the filter from Muller. The rationale to do so would have been the motivation provided by the teaching of Muller that to do so would predictably reflect a portion of the radiation emitted away from the receiver, and thus, direct only a portion towards it (column 6 lines 67-68, column 7 lines 1-18 and figure 10).

Regarding the arrangement of filters, Muller teaches that it is possible to rearrange the filters to be in a line, defining a discrete area between emitter and receiver (figure 10).

Muller does not teach that multiple filters can be put in a straight line. It also doesn't teach that moving the filter relative to the heat source and smoking article adjusts the quantity of radiation transmitted.

It would have been obvious to position multiple filters in discrete areas with different absorption characteristics because figure 9 shows that multiple filters can be used and they could be combined with the arrangement in a straight line, to form discrete area, like the filter shown in figure 10. These figures are variants in design of the filters and can combine with each other. It is also inherent that by moving the filters, the quantity of radiation transmitted to smoking articles can be adjusted. The farther away the filter is from the heater, the longer the distance the radiation has to travel. Therefore the longer the distance the radiation has to travel, the weaker the intensity of the radiation when it hits the filter.

8. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma et al (US 6161551) in view of Muller (US 3739365).

The teachings of Sakuma are disclosed above in the rejection of claim 26.

Sakuma does not teach that the end of the smoking device can be selectively shielded from the heat source, to prevent substantial transfer of heat from the heat source to said end.

Muller teaches a filter placed in between the radiation source and the end target (column 6 lines 67-68 and column 7 lines 1-18). It also shows that some of the radiation can go through the filter and some does not (figure 10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the smoking machine in Sakuma with the shield from Muller. The rationale to do so would have been the motivation provided by the teaching of Muller that to do so would predictably allow only a certain portion of the radiation that hits said filter onto the target (column 7 lines 6-8). It is inherent that transmitting radiation is a way to transmit heat. Therefore, by preventing the transfer of radiation to the target the filter is also preventing the transfer of heat to the end of the smoking article.

9. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma et al (US 6161551) in view of Sakuma et al (US 5411039).

The teachings of Sakuma (551) are disclosed above in the rejection for claim 26.

Sakuma (551) does not teach that the sensor is arranged to detect radiation reflected from or emitted by the smoking article.

Sakuma (039) teaches a sensor on a smoking machine for position detection detects radiation emitted from the burning portion of a smoking article (column 4 lines 24-29).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the smoking machine in Sakuma (551) with the sensor from Sakuma (039). The rationale to do so would have been the motivation provided by the

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teaching of Sakuma (039) that to do so would predictably create a smoking machine with increased efficiency and safety. The sensor is used to detect radiation off the end of the smoking article. This is done so the smoking machine can determine when to move the cut off mechanism in order to stop the smoking article from burning any longer (column 6 lines 38-43). Therefore, by controlling the burn and not allowing time to be wasted by allowing a smoking article to burn too long, safety and efficiency are increased.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bebich (US 6581581, ignition by electromagnetic radiation), Pillsbury et al (US 4140003, smoking machine) and Norman et al (US 4858628, smoking machine).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW HOOVER whose telephone number is (571)270-7663. The examiner can normally be reached on Monday-Friday, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571)272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/MH/  
Examiner AU4122

/Timothy J. Kugel/  
Primary Examiner, Art Unit 1796